SHURTAN GAS CHEMICAL COMPLEX INCREASE EFFICIENCY OF STEAM BOILERS

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Abstract

In this article, water from the Karshi main canal, produced by the RA-6101 Chanute Manufacturing Company, is produced by the Shurtan Gas Chemical Complex (SHGC). The method of installing an air regenerative heater by steaming a steam turbine from a low-pressure steam collector was considered.

Keywords: Farming, relationship esteem, responsibility, bank.

Introduction

From the first days of our independence, our first President I. At Karimov's initiative, special attention was paid to the implementation of consistent reforms in the oil and gas industry and the development of the industry. Ensuring the independence of the country's oil and energy resources is one of the first issues to be addressed.

In 1997, in accordance with the decision of the Government of the Republic of Uzbekistan, the construction of the Shurtan Gas Chemical Complex, a large processing plant in the Guzar district of the Kashkadarya region, began. On February 17, 1998, Uzbekneftegaz and the Consortium signed an agreement on design, construction, equipment and commissioning. The consortium consists of several companies: ABB Lummus Global of the United States, ABB Soimi of Italy,

Mitsuisco of Japan, and Toyo Engineering. Banks from the United States and Japan participated in financing the project.

The technological part of the project amounted to 656.6 million US dollars. In addition to foreign loans, the national currency, equivalent to $ 328 million, was spent on the design and construction of the complex. Specialists from the United States, Japan, Germany, Italy, Canada, South Korea and France were involved in the project. In 2001, the Shurtan Gas Chemical Complex was launched in the Kashkadarya region of the Republic of Uzbekistan, and in August 2002, the first Uzbek polyethylene was produced. Since that day, products worth 130 billion 500 million soums have been produced. It is implemented every year. 100 thousand tons of liquefied gas. Gas condensate 100 thousand tons. Granulated sulfur is more than 2,500 tons of polyethylene and more than 125,000 tons. In terms of production and technological indicators, such a set is the only one in the CIS in the world. It is one of the largest projects of the independence period and is the result of international cooperation. ShGKM produces several types of polyethylene products as a result of processing of low-sulfur gas in the Shurtan field. Its area is 150 hectares. The technologies used in SHGKM are one of the new ways to use natural resources. The production technology consists of two main areas: ethylene and polyethylene receiving facilities and common plant areas. For the implementation of the technological processes of the GCCM, the heart of the GCCM is the energy resource shop - the shop of steam and gas supply (GAS). In order to carry out the technological process in the BGP shop, ie to separate the natural gas into fractions, the working fluid is delivered in the required parameters. The quality of its products also depends on the BGHT workshop. [A.1;, 2;].

The relevance of the research. Shurtan Gas Chemical Complex is designed for the production of polymer products based on the technology of thermal pyrolysis of ethane gas, which is mainly a natural gas. steam is used. The steam is supplied by a steam-air supply plant (GAS). Water for the production of high-temperature steam is taken from the Karshi main canal. The rational use of fuel and energy resources is a topical issue today.

In order to save Shurtan gas, which is burned in the steam boiler, and to use the resources rationally, the fuel is slowed down by increasing the air temperature for burning the fuel.

The purpose of the study In order to increase the efficiency of the combustion process in the combustion chamber of the steam boiler type 35VP18R / 54, developed by RA-6101 Chanute

Manufacturing, it is an additional recuperative steam recirculation steam to increase the efficiency of the boiler.

The task of research It is possible to study the technological process of SHGKM and the consumption of air supplied to the furnace of the steam boiler type 35VP18R / 54, developed by RA-6101 Chanute Manufacturing, located in the BGP, by installing an additional steam air heater. Calculation and modernization of steam air heaters installed in order to reduce fuel consumption for the production of high-parameter steam used in the technological process of the complex.

Object of research Shurtan Gas Chemical Complex BGHT Shop RA-6101 Installation of steam boiler type 35VP18R / 54 developed by Chanute Manufacturing Company. [A.1;, 2;, 3;].

General description of Shurtan gas chemical complex.

The construction of the Shurtan Gas Chemical Complex (SHGC) is one of the most successful projects of the national holding company Uzbekneftegaz in the years of independence. Construction on February 17, 1998 (ABC Lummus Global) (USA), ERMAFA, Fisher (Germany), ABB soimi (Italy), Nova chemicols (Canada) , Soyuzvneftrans (Russia), Mitsuisco Litd (Japan) on the basis of an agreement signed with foreign companies. The technological facilities of SHGKM are located on an area of 150 hectares, including the Talimarjan thermal power plant to the west of the complex, and the main facility of the Shurtan Neft Gas PEC 27 km to the southwest and north of the Talimarjan reservoir. At a distance of 1,700 m in the north-east, a complex of workers' towns was built. In the northern part of the complex there is a reservoir with a capacity of 11.5 million m3 of water, using the Talimarjan reservoir and the Karshi main canal.

In 2001, in the Kashkadarya region of the Republic of Uzbekistan, the first Uzbek polyethylene was launched.

Shurtan Gas Chemical Complex is designed to process 3.5 billion m3 of natural gas per year.

Polyethylene granules - 125 thousand tons, liquefied gas - 100 thousand tons, granular sulfur - 2.5 thousand tons, methane - 3.2 billion m3. [A.1:, 2;, 3;, 4;].

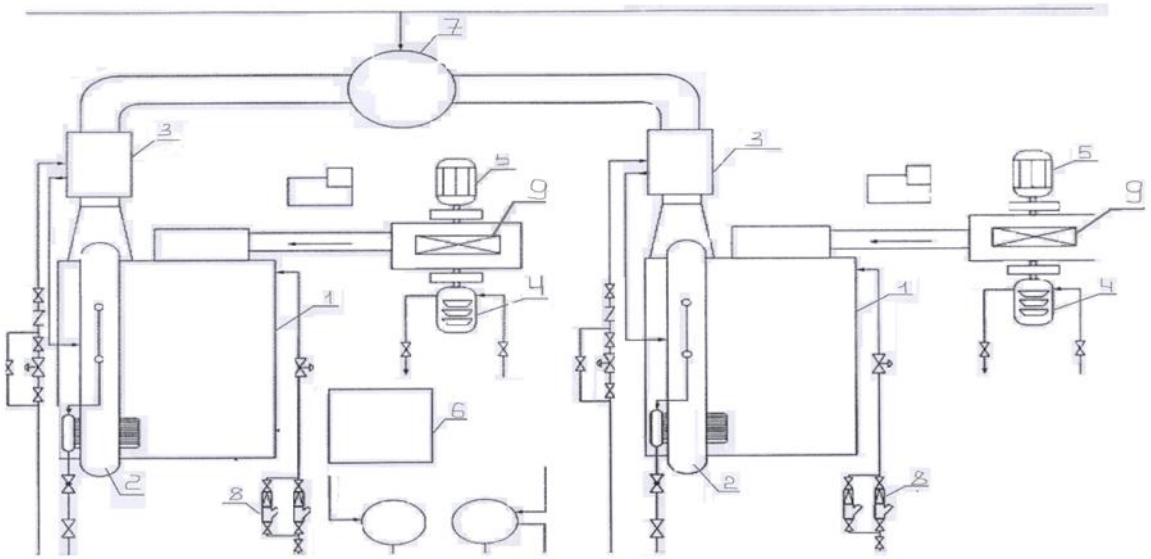

Figure 3 - RA - 6101 general layout of the boiler

1 - RA - 6101 steam boiler
2 - RA - 6101 Steam boiler drum
3 - Economizer
4 - Steam turbine
5 - Electric motor
6 - Boiler control room
7 - Smoke extraction pipe
8 - Supply water pumps
9 - Air heaters
10 - Auxiliary air heater

Given the current depletion of fuel and energy resources, it is important for each enterprise to develop and implement various rationalization proposals in order to save energy resources, as well as to save economic resources of the enterprise. The steam turbine serving for the power supply of the air heater is an additional air heating unit consisting of a system of pipes with a diameter of 170 kg, manufactured at a temperature of 170 kg. we see resource slowdown: [A.4;]

$$b_{ë}^{ш} = 1m^3 = 200sum \qquad (1.1.)$$

Expenditure for each boiler:

$$B_{ë}^{ш} = 13000m^3 / hour \qquad (1.2).$$

An additional air heater installed for each boiler leads to a reduction in fuel and energy resources

$$b_{ë}^{ш} = 250m^3 / hour \qquad (1.3.)$$

This means that the daily fuel consumption is as follows:

$$B_{ë}^{ш} = 24 \cdot 250 = 6000m^3 / hour \qquad (1.4.)$$

A month's worth of delayed fuel energy resources $B_{ë}^{ш} = 6000m^3 / hour$ is as follows:

$$B_{ë}^{ш} = 30 \cdot 6000 = 180000m^3 / hour \qquad (1.5.)$$

If we consider the amount of capital:

$$B_{ë}^{ш} = 6000 \cdot 200 = 1200000sum \qquad (1.6.)$$

One-year conditional fuel deceleration:

$$B_{ë}^{ш} = 6000 \cdot 200 = 1200000sum \qquad (1.7.)$$

Relevance and practical significance of the research work “In order to increase the efficiency of the Shurtan Gas Chemical Complex, a proposal was made to install an additional air heater. The chemical complex of Shurtan gas is mainly intended for the production of polymer products by processing ethane gas from natural gas on the basis of thermal pyrolysis technology.

In order to produce high-pressure steam, the first treatment of water from the Karshi main canal on the basis of demineralization was considered in the workshop. The quality of the products of SHGKM also depends on the BGHT workshop.

The technology of production of Shurtan gas chemical complex consists of two main areas: ethylene and polyethylene receiving facilities and a common plant area. High-parameter steam is used as the main energy resource for the implementation of technological processes at the plant, ie for the fractionation of natural gas.

The steam and gas supply shop serves for the delivery of steam. Water for the production of high-temperature steam is taken from the Karshi main canal. Due to the high salinity and hardness of natural water, it is necessary to desalinate and soften the water before using it in the SHGKM cycle.

CONCLUSION

In the course of the research, the water from the Karshi main canal, which is used to produce high-pressure steam in this shop, is ignited in the combustion chamber of a 35VP18R / 54 high-

pressure steam boiler produced by RA-6101 Chanute Manufacturing. method has been considered.

The process is based on the combustion reaction in the furnace, mechanical and chemical processes. The air heater performs the function of heating the air heater with steam at a rate of 170 - 190 °C at 5 kg / s.

RA-6101 Chanute Manufacturing's 35VP18R / 54 steam boiler saves up to 20,000 m^3 of natural gas per hour.

My suggestion on the subject of my research is that it is possible to make a recuperative air heater based on local conditions.

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